

WHAT IS CLAIMED IS:

1. A method for sending data from a transponder having at least one memory and a transmission criteria comprising the steps of:
- a. detecting the presence of an interrogator;
 - b. transmitting the data;
 - c. determining whether the interrogator read the complete data transmission while the transponder is transmitting the data and upon determining that the interrogator did not read the complete data transmission;
 - i. storing a number in the memory;
 - ii. changing the number;
 - iii. iteratively repeating the step of changing of the number until the number stored in memory satisfies the transmission criteria;
 - iv. transmitting the data;
2. The method as recited in claim 1, further comprising iteratively repeating step (c) until the transponder determines that the interrogator has read the complete data transmission.
3. The method as recited in claim 2, wherein the step of detecting the presence of an interrogator comprises receiving a carrier signal from the interrogator.
4. The method as recited in claim 3, further providing the step of powering the transponder.

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5. The method as recited in claim 4, wherein the transponder has a transmit state which can be either transmit-armed or transmit-unarmed and wherein the powering step comprises turning the transponder on; setting the transmit state to transmit-armed; and setting the memory to a number which satisfies the transmission criteria.

5 6. The method as recited in claim 5, wherein the step of turning the transponder on comprises generating power from the carrier signal.

7. The method as recited in claim 5, wherein the transponder has a full cycle flag and wherein the step of transmitting the data comprises determining that the transponder is in the transmit-armed state and that the carrier signal has been modified in a predetermined manner; transmitting the data in groups of one or more bits; performing the determining step after each group of data bits is transmitted; iteratively repeating the steps of transmitting the data in groups and performing the determining step; and setting the full cycle flag after verifying that all the data bits have been transmitted.

8. The method as recited in claim 7, wherein the step of the transponder determining that the interrogator read the complete data transmission comprises verifying that the carrier signal has not been modified until the full cycle flag is set.

9. The method as recited in claim 1, wherein the step of storing a number in memory comprises generating a random number and assigning the number to memory.

10. The method as recited in claim 1, wherein the changing the number step comprises determining that the carrier signal has been modified in a predetermined manner and altering the number in memory each time the carrier signal is modified in a predetermined manner.

11. The method as recited in claim 9, wherein the number is altered by decrementing by one.

12. The method as recited in claim 11, wherein the transmission criteria is satisfied when the number equals zero.

5 Sub A17

13. A method for an interrogator reading one or more RFID transponders in a field comprising the steps of:

- a. providing a carrier signal;
- b. detecting the presence of at least one transponder;
- c. receiving data from all active transponders in the field;
- d. determining whether the interrogator has received a valid data transmission; and
- e. upon determining an invalid data transmission, modifying the carrier signal to inform all active transponders in the field that there was an incomplete read.

14. The method recited in claim 13, wherein steps (c) and (d) are iteratively repeated until the interrogator determines that it has read the complete data for each transponder in the field.

3 15. The method recited in claim 14, further comprising the step of transmitting the complete data for each transponder from the interrogator to a computer system for processing.

4 16. The method recited in claim 14, wherein the interrogator includes a demodulator and the step of detecting the presence of one or more transponders comprises receiving data from the demodulator and modifying the carrier signal in a predetermined manner.

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~~5~~ 17. The method recited in claim ~~16~~⁴, wherein the step of modifying the carrier signal in a predetermined manner comprises sending out the carrier signal continuously.

Sub A2 → 18. The method as recited in claim 14, wherein the step of determining whether the interrogator has received a invalid data transmission comprises detecting the interrogator's inability to compute a proper synchronization word, a proper CRC, or an proper word length.

19. The method as recited in claim 14, wherein the step of modifying the carrier signal in a predetermined manner comprises suppressing the carrier signal for a predetermined number of clock cycles.

20. The method as recited in claim 14, wherein the step of modifying the carrier signal is performed prior to the transponder sending its complete data transmission.

21. The method as recited in claim 20 wherein the step of modifying the carrier signal is performed substantially simultaneously upon the determination that invalid data transmission has been received.

~~10~~ 22. The method as recited in claim ~~14~~², wherein the receiving step comprises receiving the data in groups of one or more bits and checking the validity of each group of data as it is received.

~~11~~ 23. The method as recited in claim ~~14~~², wherein the step of determining complete data transmission comprises determining that the CRC is valid and modifying the carrier signal in a predetermined manner.

20 ~~12~~ 24. The method as recited in claim ~~21~~⁹, wherein step of modifying the carrier signal in a predetermined manner comprises suppressing the carrier signal for a predetermined number of clock cycles.

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